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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/029,035      | 12/28/2001  | Young Ho Bae         | 2658-0280P          | 3483             |

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| EXAMINER |
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KACKAR, RAM N

|          |              |
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| ART UNIT | PAPER NUMBER |
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1763

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,035

Applicant(s)

BAE, YOUNG HO

Examiner

Ram N. Kackar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings were received on 5/11/2005. These drawings are not acceptable. The drawing changes in Fig. 10A, 10B and 10C are neither supported by specification nor by original specification and original drawings. The original drawings for Fig 10A to 10C had the substrate horizontal but covering the groove. Since this was not consistent with rest of the drawings where the groove was shown outside the substrate the drawings were corrected in 3/1/2004 amendment. The drawings were again amended in 10/19/2004 amendment to show the bend of the substrate by 15 degrees with respect to horizontal and 85 degrees from vertical while loading to the susceptor. However latest amendment to show an angle of more than 90 degrees from vertical is unclear.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Tepman et al (US 5589224).**

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD, sputtering, ion implanters etc (Col 1 lines 10-19), lift pins (Fig 1-30), robot arm (Fig 4 and Col 2 lines 13-16)

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and groove around susceptor to collect deposition so that build up on the surface of the susceptor may not cause problem by sticking to the substrate (Fig 3-38 and Col 4 lines 54-63).

Regarding claims 2 and 3, Tepman et al disclose more than 10mm distance from the groove (Fig 3-38) for sliding since entire surface on the susceptor (which would be more than 200 mm for a standard substrate of 200mm) under the robot arm could be used for sliding a substrate if intended.

**4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by DuBois et al (US 5855687).**

DuBois et al disclose a vacuum deposition apparatus for CVD with heatable susceptor (Col 3 line 22-42 and lines 38-40), lift pins and robot arm (Col 5 lines 49-51), groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Col 4 lines 43-48).

Regarding claims 2 and 3 here too the area for sliding is more than 10mm from the groove (Fig 3-44) to allow the substrate to slide.

***Claim Rejections - 35 USC § 103***

**5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tepman et al (US 5589224) in view of Rempei Nakata (US 5119761).**

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Tepman et al is discussed above.

Tepman et al do not disclose the susceptor to be made of Quartz.

Quartz susceptors are common for thermal processing for its thermal insulation properties.

Rempei Nakata discloses a quartz susceptor (Fig 12-106 and Col 1 lines 44-49).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a susceptor of quartz for its excellent thermal properties of insulation.

**7. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tepman et al (US 5589224).**

Tepman et al disclose groove but do not disclose different shapes of the bottom of the groove. Since the purpose of the groove is to collect film forming material and applicant has not disclosed any special advantage of a particular shape at the bottom they are considered art recognized equivalent and therefore obvious.

The courts have held *regarding change in shape*: It was held in *re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that the shape was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular shape was significant. (Also see MPEP 2144.04(d)).

Similarly, *regarding change in size/proportion*: It was held in *re Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984) that where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative

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dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

***Response to Amendment***

Applicant's arguments filed 5/11/2005 have been fully considered but they are not persuasive.

Applicant argues that Tepman et al do not have any structure which can be equated with a sliding portion. Applicant further argues that search of words like slid, slide and/or sliding in Tepman et al did not find any hits.

The words slid, slide and/or sliding may not appear in Tepman et al. However a surface on the susceptor is disclosed where a substrate on robot arm could slide if the robot arm bends due to the heavy load of the substrate. It is inherent that the entire surface on the susceptor under the robot arm could be used for such sliding.

Applicant further argues that Tepman et al appears to perform a transfer which is fundamentally different from the sliding transfer of the applicants claimed invention.

It appears from the disclosure that slide error is caused by the arm bending due to weight of the substrate (Para 0024 in the publication), which causes the substrate to be caught by the film forming material. Further this arm could bend by 15 degrees. Applicant's reference to "Sliding transfer" is unclear.

Applicant argues that in Tepman et al the deposited material builds up in the groove as a result of deposition process and not as a result of sliding the substrate on the surface of the susceptor.

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It is inherent that the groove will collect any thing pushed into it by sliding.

Applicant has made similar arguments against DuBois et al.

Since Tepman et al and DuBois et al have similar structure the response to applicant's arguments in these regards is same.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar AU 1763